

## **REMARKS**

In an Office Action dated January 3, 2007, the Examiner rejected claims 1-10, 12-14, 17-19, 23, 25, 28-31, 36-39, and 41-47 under 35 U.S.C. §103(a) as being unpatentable over Schmutz (U.S. patent application publication no. 2001/0031621) in view of Durrant et al. (U.S. patent no. 6,501,955, hereinafter referred to as “Durrant”) and further in view of Nakatsugawa (U.S. patent application publication no. 2001/0014586). The Examiner rejected claims 20-22, 24, 34, and 35 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Periyalwar et al. (U.S. patent application publication no. 2004/0192204, hereinafter referred to as “Periyalwar”). The Examiner rejected claims 32 and 33 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Dinkins (U.S. patent no. 5,633,876). The Examiner rejected claim 40 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Argyroudis (U.S. patent no. 5,892,758). The rejections and objections are traversed and reconsideration is hereby respectfully requested.

The Examiner rejected claims 1-10, 12-14, 17-19, 23, 25, 28-31, 36-39, and 41-47 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and further in view of Nakatsugawa. Claim 1 has been amended to provide for, at a base site, automatically determining whether to selectively allocate a wireless relay resource intermediate between the base site and the transmitter, providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter and further providing a grant instruction to the transmitter and the wireless relay resource comprising channel identification information and transmit parameters that are used by the transmitter to transmit and by the wireless relay resource to receive. These features are not taught by any of Schmutz, Durrant, or Nakatsugawa.

In rejecting claim 1, the Examiner acknowledged that neither Schmutz nor Durant teaches automatically determining whether to selectively allocate a wireless relay

resource intermediate between the base site and the transmitter to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter, and providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter. Nor do Schmutz or Durant teach the feature of claim 1 of providing a grant instruction to the transmitter and the wireless relay resource comprising channel identification information and transmit parameters that are used by the transmitter to transmit and by the wireless relay resource to receive. While Schmutz teaches that the BTS may allocate frequencies that the repeater may use, these are backhaul frequencies, that is, frequencies that the wireless relay resource may use to transmit to the BTS, and this list is not also sent to the mobile user.

Nakatsugawa teaches a WLAN communication structure. In Nakatsugawa, the MS is informed of the address of the assigned repeater as the MS will be communicating over the air interface with the assigned repeater and not with the selector (the master repeater, unless the master repeater selects itself). In response to being informed of the assigned repeater, the MS negotiates a communication with the assigned repeater. Nowhere does Nakatsugawa teach the features of claim 1 of providing, by a base site, a grant instruction to the transmitter and the wireless relay resource comprising channel identification information and transmit parameters that are used by the transmitter to transmit and by the wireless relay resource to receive.

Furthermore, claim 1 teaches that a knowledge of the allocation of the wireless relay resource is unnecessary to an MS. The Examiner contended that Durrant teaches that the mobile users will have no knowledge of the repeater, but it makes no sense to combine such a teaching of Durrant with Nakatsugawa, as a knowledge of assigned repeater is essential to the operation of Nakatsugawa since the MS must negotiate with the assigned repeater.

Therefore, none of Schmutz, Durrant, or Nakatsugawa, individually or in combination, teaches the features of claim 1 of, at a base site, automatically determining whether to selectively allocate a wireless relay resource intermediate between the base

site and the transmitter, providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter and further providing a grant instruction to the transmitter and the wireless relay resource comprising channel identification information and transmit parameters that are used by the transmitter to transmit and by the wireless relay resource to receive, and wherein knowledge of the wireless relay resource allocation is unnecessary for the transmitter. Accordingly, the applicants respectfully request that claim 1 may now be passed to allowance.

Since claims 2-5, 9-10, 12-14, 17-19, 23, 25, 28-33, 36-40, 46, and 47 depend upon allowable claim 1, the applicants respectfully request that claims 2-10, 12-14, 17-19, 23-25, 28-33, 36-40, 46, and 47 also may be passed to allowance.

With respect to claim 6, the Examiner contended that Nakatsugawa teaches the feature of claim 6 of automatically determining whether to allocate multiple wireless relay resources to thereby at least attempt to increase the quality of service. The applicants respectfully disagree. Nakatsugawa merely teaches an allocation of a single repeater for a communication with a user terminal. Therefore, Nakatsugawa does not teach the features of claim 6. For this reason, and since claim 6 depends upon allowable claim 1, the applicants respectfully request that claim 6, as well as claims 7 and 8 which depend upon claim 6, may now be passed to allowance.

The Examiner rejected claims 20-22, 24, 34, and 35 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Periyalar. Claims 20 and 34 each has been amended to include the features of claim upon which they depended, that is, claim 1. In rejecting claims 20-22, 24, 34, and 35, the Examiner acknowledged that Schmutz, Durrant, and Nakatsugawa fail to teach the feature of claim 20 of combining received portions of relayed transmissions from the transmitter using hybrid automatic repeat request to reconstruct the transmission, the feature of claim 24 of combining received portions of relayed transmissions from at least one wireless relay resource with portions of redundant transmissions from the transmitter to reconstruct the transmission, and the feature of claim 34 of determining whether the

transmission has been likely correctly received. However, the Examiner contended that these features are taught by Periyalwar.

The applicants contend that they invented the features of claims 20-22, 24, 34, and 35 prior to the filing date of Periyalwar. In support of their contention, attached hereto is a Declaration of Eugene Visotsky, a co-inventor of the pending application, stating that the features of claims 20-22, 24, 34, and 35 were invented prior to the filing date of Periyalwar, that is, prior to March 31, 2003. Therefore, the applicants respectfully contend that Periyalwar is not prior art to claims 20-22, 24, 34, and 35, and that, as a result, the prior art does not teach the features of claims 20, 24, and 34. Accordingly, the applicants respectfully request that claims 20, 24, and 34 may now be passed to allowance, claim 24 also being allowable as it depends upon allowable claim 1.

Since claims 21-22 depend upon allowable claim 20 and claim 35 depends upon allowable claim 34, the applicants respectfully request that claims 21-22 and 35 also may be passed to allowance.

Claim 41 has been amended to provide a communications controller configured to operate at a base site and including a relay resource activator that is operably coupled to the resource allocator, such that a wireless relay resource intermediate between the base site and the remote unit and having a demodulation processing relay resource can be selectively activated by the communications controller to improve quality of service for a wireless transmission from the remote unit when transmitting within reception range of the receiver and provides an instruction to the relay resource to cause the relay resource to relay at least portion of the wireless transmission from the remote unit, wherein the instruction comprises providing at least identifying information regarding the remote unit, and a means for providing a grant instruction to the remote unit and the wireless relay resource comprising channel identification information and transmit parameters that are used by the remote unit to transmit and by the wireless relay resource to receive, wherein the knowledge of the wireless relay resource allocation is unnecessary for the transmitter. As described in detail above, none of Schmutz, Durrant, and Nakatsugawa, individually or in combination, teaches such a communications controller. Accordingly, the applicants respectfully request that claim 41 may now be passed to allowance.

Since claims 42-45 depend upon allowable claim 41, the applicants respectfully request that claims 42-45 may now be passed to allowance.

Claim 48 teaches a wireless communication system that includes a base site that is configured to determine a need to receive a wireless transmission from a transmitter that is presently within wireless communications range of the base site, automatically determine whether to selectively allocate a wireless relay resource intermediate between the base site and the transmitter to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter, and provide an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, and a wireless relay resource that is configured to combine received portions of relayed transmissions from the transmitter using hybrid automatic repeat request to reconstruct the transmission. As described in detail above, none of Schmutz, Durrant, and Nakatsugawa, individually or in combination, teaches such a wireless communication system. Accordingly, the applicants respectfully request that claim 48 may now be passed to allowance.

As the applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter. Furthermore, please charge any additional fees (including any extension of time fees), if any are due, or credit overpayment to Deposit Account No. 50-2117.

Respectfully submitted,  
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